List of Contents and Author Index

Volume 38, 2003

List of Contents

NUMBER 1/2

D. Greenspan	1	Discrete Physics with Conservation and Galilean Invariance
A. Noore	13	Real Time Fault Tolerant Control of Robot Manipulators
P. Zhang and **X. Li**	23	An Infeasible-Start Path-Following Method for Monotone LCPs
A. Leontitsis	33	A Note on Shuffled Financial Surrogates
J. S. R. Anttonen, **P. I. King** and **P. S. Beran**	41	POD-Based Reduced-Order Models with Deforming Grids
D. K. Satpathi, **B. V. Rathish Kumar** and **P. Chandra**	63	Unsteady-State Laminar Flow of Viscoelastic Gel and Air in a Channel: Application to Mucus Transport in a Cough Machine Simulating Trachea
M. Delgado Pineda and **E. A. Galperin**	77	Global Optimization in R^n with Box Constraints and Applications: A MAPLE Code
E. Ponsoda, **J. V. Romero,** **J. R. Serrano** and **J. M. Arnau**	99	A New Iterative Method for Flow Calculation in Intake and Exhaust Systems of Internal Combustion Engines
T. Yoshikawa and **A. M. Balk**	113	A Conformal-Mapping Model for Bubbles and Fingers of the Rayleigh-Taylor Instability
H. Rasmussen, **G. C. Wake** and **J. Donaldson**	123	Analysis of a Class of Distributed Delay Logistic Differential Equations
H. P. Urbach	133	Generalised Sampling Theorem for Band-Limited Functions
A. Abouhamza and **R. Pierre**	141	A Neutral Stability Curve for Incompressible Flows in a Rectangular Driven Cavity
R. A. Adomaitis	159	A Reduced-Basis Discretization Method for Chemical Vapor Deposition Reactor Simulation
P. K. Palamides	177	Generalized Painlevé Equation and Superconductivity. Asymptotic Behavior of Unbounded Solutions
S. Dontha and **Z. Drici**	191	Variational Lyapunov Method for Discrete Hybrid Systems
S. Asghar, **M. R. Mohyuddin** and **T. Hayat**	201	Unsteady Flow of a Third-Grade Fluid in the Case of Suction
C. Gout and **A. Guessab**	209	Extended Lagrange Interpolation and Nonclassical Gauss Quadrature Formulae

NUMBER 3/4

D. Greenspan	229	A New Theory of the Molecular Bond
T. L. Saaty and **M. S. Ozdemir**	233	Why the Magic Number Seven Plus or Minus Two
J. Banaś and **K. Sadarangani**	245	Solutions of Some Functional-Integral Equations in Banach Algebra
H. M. Yang, M. Della Negra, Y. C. Liang, W. Queiroz and **L. K. Hotta**	251	The Serorevertion and the Survival Related to HIV Infection Among Children: Statisticalk Modeling Applied to Retrospective Data Collection
S. Karaa, J. Zhang and **C. C. Douglas**	269	Preconditioned Multigrid Simulation of an Axisymmetric Laminar Diffusion Flame
S. R.-J. Jang and **J. Baglama**	281	Persistence in Variable-Yield Nutrient-Plankton Models
Y. Zhou and **H. Liu**	299	Stability of Periodic Solutions for an SIS Model with Pulse Vaccination
L. Zietsman, A. J. van der Merwe, J. J. Geldenhuys and **N. F. J. van Rensburg**	309	Application of the Finite-Element Method to the Vibration of a Rectangular Plate with Elastic Support at the Boundary
L. Egghe, L. Liang and **R. Rousseau**	323	The Byline: Thoughts on the Distribution of Author Ranks in Multiauthored Papers
B. G. Zhang, Y. Zhou and **Y. Q. Huang**	331	Existence of Positive Solutions for Certain Nonlinear Partial Difference Equations
R. Tsaih	339	The Evolution of Internal Representation
J. P. Kenne, E. K. Boukas and **A. Gharbi**	351	Control of Production and Corrective Maintenance Rates in a Multiple-Machine, Multiple-Product Manufacturing System
M. L. Bertotti and **N. Bellomo**	367	Boundary Value Steady Solutions of a Class of Hydrodynamic Models for Vehicular Traffic Flow
C.-B. Cheng	385	A Fuzzy Inference System for Similarity Assessment in Case-Based Reasoning Systems: An Application to Product Design
Q. He, Z.-Z. Shi, L.-A. Ren and **E. S. Lee**	395	A Novel Classification Method Based on Hypersurface
M. S. Mongiogì and **R. A. Peruzza**	409	Fast Relaxation Phenomena and Slow Mode in Extended Thermodynamics of Superfluids
B. Carbonaro	423	The "Raven Paradox" in the Light of Probability Theory

T. K. Kar 449 Selective Harvesting in a Prey-Predator Fishery with Time Delay

NUMBER 5/6

J. P. Arenas and **V. Poblete** 459 Asymptotic Approximation for Sound Propagation in Ducts Carrying Low Subsonic Mean Flow

J. M. Montagna and **A. R. Vecchietti** 465 Retrofit of Multiproduct Batch Plants Through Generalized Disjunctive Programming

D. R. Anderson and **J. Hoffacker** 481 A Stacked Delta-Nabla Self-Adjoint Problem of Even Order

P. S. Crooke, S. Hota, J. J. Marini and **J. R. Hotchkiss** 495 Mathematical Models of Passive, Pressure-Controlled Ventilation with Different Resistance Assumptions

M.-H. Zhang and **Q.-S. Cheng** 503 Gaussian Mixture Modelling to Detect Random Walks in Capital Markets

Y. Wang and **Y. Meng** 509 Asymptotic Behavior of a Competition-Diffusion System with Time Delays

S. Fackrell, M. Mastroianni and **G. W. Rankin** 519 Model of the Filling of an Automotive Fuel Tank

J.-B. Sheu, Y.-H. Chou and **M.-C. Weng** 533 Stochastic System Modeling and Optimal Control of Incident-Induced Traffic Congestion

R. Pavani, F. Calio' and **E. Garavaglia** 551 Numerical Modelling in Building Reliability Using Both a Probabilistic Approach and a Delay Differential Model

L.-H. Chen and **M.-C. Weng** 559 A Fuzzy Model for Exploiting Quality Function Deployment

P. S. Williams and **T. E. Simos** 571 A New Family of Exponentially Fitted Methods

J. Golec and **S. Sathananthan** 585 Stability Analysis of a Stochastic Logistic Model

J. Wang 595 A Weight-Balanced Branching Rule for SAT

Y. Yavin 611 Modelling and Control of the Motion of a Trolley Moving on a Plane with a Time-Dependent Inclination

L. R. Foulds and **K. Neumann** 623 A Network Flow Model of Group Technology

N. Bellomo, E. Mamontov and **M. Willander** 637 The Generalized Kinetic Modelling of a Multicomponent "Real-Life" Fluid by Means of a Single Distribution Function.

P.-F. Pai 661 Capacitated Lot Size Problems with Fuzzy Capacity

T. Dumrongpokaphan, Y. Lenbury and P. S. Crooke 671 The Analysis of Higher-Order Cascade Systems with Separation Conditions Pivoting on the Slow Components: Application to a Model of Migration for Survival of the Species

NUMBER 7–9

HUNGARIAN APPLIED MATHEMATICS AND COMPUTER APPLICATIONS

A. Benczúr Xiii Preface

A. Benczúr 691 The Evolution of Human Communication and the Information Revolution—A Mathematical Perspective

M. Arató 709 A Famous Nonlinear Stochastic Equation (Lotka-Volterra Model with Diffusion)

V. Bentkus, G. Pap and M. van Zuijlen 727 Confidence Bounds for a Parameter

F. Bodon and L. Rónyai 739 Trie: An Alternative Data Structure for Data Mining Algorithms

S. Csörgö 753 Weighted Correlation Tests for Location-Scale Families

J. Demetrovics, Gy. O. H. Katon and D. Miklós 763 Recent Combinatorial Results in the Theory of Relational Databases

J. Demetrovics, L. Rónyai and S. Hua Nam 773 Dependencies and Generalized Relations

G. Farkas 783 Periodic Elements and Number Systems in $\mathbb{Q}(\sqrt{2})$

G. Fazekas 789 An Extremum Problem for Polynomials and Bounds for Codes with Given Distance and Diameter

G. Fazekas and R. Jónás 797 A Scaling and Rotating Invariant Object Matching Algorithm

S. Fegyverneki 803 Robust Estimators and Probability Integral Transformations

Á. Fóthi, J. Nyéky-Gaizler and Z. Porkoláb 815 The Structured Complexity of Object-Oriented Programs

J. Gáll 829 Some Possible Stock Price Distributions under Incompleteness of the Market

T. Gyires 839 Software Agents Architecture for Controlling Long-Range Dependent Network Traffic

M. Hoffmann and E. Kovács 849 Developable Surface Modelling by Neural Network

Cs. Holló 855 A Partial Enumeration Algorithm for Solving PNS Problems

Z. Horváth, V. Zsók, P. Serrarens and **R. Plasmeijer**	865	Parallel Elementwise Processable Functions in Concurrent Clean
I. Juhász and **Zs. Bancsik**	877	Increasing the Degree of Closed B-Spline Curves
I. Kátai	883	Generalized Number Systems in Euclidean Spaces
L. Kollár	893	GUIML, Creating Dynamic GUI Objects Using XML
J. Kormos and **K. Veréb**	903	Recognition of Chain-Coded Patches with Statistical Methods
A. Kovács	909	Number Expansions in Lattices
M. Lénárd	917	Birkhoff Quadrature Formulae Based on the Zeros of Jacobi Polynomials
E. Molnár, I. Prok and **J. Szirmai**	929	D-V Cells and Fundamental Domains for Crystallographic Groups, Algorithms, and Graphic Realizations
M. Szilvási-Nagy and **Gy. Mátyasi**	945	Analysis of STL Files
J. Sztrik and **C. S. Kim**	961	Markov-Modulated Finite-Source Queueing Models in Evaluation of Computer and Communication Systems
K. Veréb	969	Generalization of the Binary Pattern Matching in Image Processing

NUMBER 10

R. Bru, R. Cantó and **B. Ricarte**	975	Modelling Nitrogen Dynamics in Citrus Trees
B. P. Allahverdiev	989	Dilation and Functional Model of Dissipative Operator Generated by an Infinite Jacobi Matrix
D. Hömberg and **S. Volkwein**	1003	Control of Laser Surface Hardening by a Reduced-Order Approach using Proper Orthogonal Decomposition
Y. Yavin	1029	Modelling the Motion of a Car with Four Steerable Wheels
G. S. Ladde, N. G. Medhin and **M. Sambandham**	1037	Error Estimates for Random Boundary Value Problems with Applications to a Hanging Cable Problem
F. Wang, Z. Ma and **Y. Shao**	1051	A Competition Model of HIV with Recombination Effect
L. Graziano and **R. Lancellotta**	1067	A Constitutive Equation for the Porosity Field
B. B. King and **D. A. Krueger**	1075	Burgers' Equation: Galerkin Least-Squares Approximations and Feedback Control
I.-S. Kim	1087	Positive Eigenvalues of Countably Contractive Maps

P. Degond, C. Parzani and M.-H. Vignal	1093	A One-Dimensional Model of Plasma Expansion
J. Clarke and C. Lowe	1101	A Class of Analytical Solutions to the Euler Equations with Source Terms: Part II

NUMBER 11–13

STOCHASTIC MODELS IN ENGINEERING, TECHNOLOGY, AND MANAGEMENT

R. Wilson, M. Faddy and D.N. Pra Murthy	xv	Preface
M. Abdel-Hameed	1119	Optimal Control of Dams Using $P^{M}_{\lambda\tau}$ Policies and Penalty Cost
K. Amasaka	1125	Proposal and Implementation of the "Science SQC" Quality Control Principle
M. Bebbington, C.-D. Lai and K. Govindaraju	1137	Continuous Sampling Plans for Markov-Dependent Production Processes under Limited Inspection Capacity
M. Bebbington, P. Pollett and I. Ziedins	1147	Product Form Approximations for Highly Linear Loss Networks with Trunk Reservation
R. E. Dickinson and C. E. M. Pearce	1157	Rumours, Epidemics, and Processes of Mass Action: Synthesis and Analysis
T. Dohi, A. Ashioka, N. Kaio and S. Osaki	1169	The Optimal Repair-Time Limit Replacement Policy with Imperfect Repair: Lorenz Transform Approach
T. Dohi, K. Yasui and S. Osaki	1177	Software Reliability Assessment Models Based on Cumulative Bernoulli Trial Processes
M. J. Faddy and G. J. Taylor	1185	Stochastic Modelling of the Onset of *Bronchiolitis Obliterans Syndrome* Following Lung Transplantation: An Analysis of Risk Factors
H. Hohjo and Y. Teraoka	1191	A Competitive Inventory Model with Reallocation on a Plane Market
E. Hunt	1203	A Probabilistic Algorithm for Determining the Fundamental Matrix of a Block *M/G/*1 Markov Chain
A. Z. M. O. Hussain and D. N. P. Murthy	1211	Warranty and Optimal Reliability Improvement through Product Development
M. Imaizumi, K. Yasui and T. Nakagawa	1219	Reliability of a Job Execution Process Using Signatures
H. Inoue and H. Narihisa	1225	Efficiency of Self-Generating Neural Networks Applied to Pattern Recognition
B. P. Iskandar and D. N. P. Murthy	1233	Repair-Replace Strategies for Two-Dimensional Warranty Policies

K. Ito and **T. Nakagawa**	1243	Optimal Self-Diagnosis Policy for FADEC of Gas Turbine Engines
H.-D. J. Jeong, K. Pawlikowski and **D. C. McNickle**	1249	Generation of Self-Similar Processes for Simulation Studies of Telecommunication Networks
R. Jiang and **D. N. P. Murthy**	1259	Study of *n*-Fold Weibull Competing Risk Model
K. Katayama, H. Hirabayashi and **H. Narihisa**	1275	Analysis of Crossovers and Selections in a Coarse-Grained Parallel Genetic Algorithm
T. Katayama and **K. Kobayashi**	1283	Sojourn Time Analysis of a Two-Phase Queueing System with Exhaustive Batch-Service and Its Vacation Model
M. Kimura and **S. Yamada**	1293	A Hidden-Markov Estimation Method for Mean-Shift Detection of Fraction Defective in Production Process Control
K. Kimura, K. Yasui, T. Nakagawa and **N. Ishii**	1303	Optimal Checkpointing Interval of a Communication System with Rollback Recovery
T. Kimura	1313	A Consistent Diffusion Approximation for Finite-Capacity Multiserver Queues
K. Kohmoto, K. Katayama and **H. Narihisa**	1325	Performance of a Genetic Algorithm for the Graph Partitioning Problem
J. Koyanagi and **H. Kawai**	1333	An Optimal Age Maintenance for an *M*/*G*/1 Queueing System
C. D. Lai and **M. Xie**	1339	Relative Ageing for Two Parallel Systems and Related Problems
K. Nakada and **T. Yoneyama**	1347	A Stochastic Model to Evaluate Performance of Testing and Taping Processes on an LSI Production System
S. Nakagawa, S. Fukumoto and **N. Ishii**	1357	Optimal Checkpointing Intervals of Three Error Detection Schemes by a Double Modular Redundancy
T. Nakagawa and **K. Yasui**	1365	Note on Reliability of a System Complexity
S. Nakamura, C. Qian, S. Fukumoto and **T. Nakagawa**	1373	Optimal Backup Policy for a Database System with Incremental and Full Backups
M. Ohnishi	1381	An Optimal Stopping Problem for a Geometric Brownian Motion with Poissonian Jumps
H. Okamura, T. Dohi and **S. Osaki**	1391	Phase Type Approximation for Optimal Auto-Sleep Scheduling
M. Otaka and **T. Yoshida**	1399	Study on Option Pricing in an Incomplete Market with Stochastic Volatility Based on Risk Premium Analysis
P. K. Pollett and **M. R. Thompson**	1409	A New Method for Analysing the Equilibrium and Time-Dependent Behaviour of Markovian Models
T. Satow and **S. Osaki**	1419	Opportunity-Based Age Replacement with Different Intensity Rates

A. Shan, R. N. Roth and **R. J. Wilson**	1427	Genetic Algorithms in Statistical Tolerancing
T. K. Soboleva and **A. B. Pleasants**	1437	Population Growth as a Nonlinear Stochastic Process
K. Tokuno and **S. Yamada**	1443	Markovian Sotfware Reliability Measurement with a Geometrically Decreasing Perfect Debugging Rate
W. S. Verwoerd and **D. Kulasiri**	1453	Theory of Diffusions Applied to Stochastic Flow in Porous Media
G. C. Wake, T. K. Soboleva and **A. B. Pleasants**	1461	The Evolution of a Truncated Gaussian Probbility Density through Time—Modelling Animal Liveweights after Selection